

Agenda

Presented by Deborah A. Fisher, P.E., CFM, CPESC

Introduction to Understanding and Applying the Science of Stormwater in Colorado

Hydrology	Classifying storm events
Soil science	Identifying consequences of storm events
Drainage	Stormwater modeling

Common Issues of Urban Storms

Infill development	Nuisance flows
The devil in the details	

Stormwater Objectives

Complying with stormwater regulations in Colorado	
Site assessment	
Mile High Flood District MHFD (formerly Urban Drainage and Flood Control District UDFCD)	
Preparing stormwater pollution prevention plans (goals)	
Design goals:	
• Federal	• State
• Municipal	

Stormwater Storage

Detention basins	Infiltration and volume reduction
Design considerations	Outlet design
Parts of a detention pond	Vegetation
Sediment handling	MHFD UD detention spreadsheet
Soils considerations	

Foundation Drainage

Surface water vs groundwater	Types of pipes
How does water move through soil	
Sump pumps	“French drains”
Drainboard	Perimeter drains vs underdrains

Lessons Learned – Not Necessarily in Criteria Manuals

Depth of storm seers	Fertilizers
Slope stability and culverts	Debris
Order of construction	Floodplains
Water quality problems	Drainage in limited space
Salt	E-coli
Obscure things to know	

Sustainable Best Practices in Stormwater Detention

Naturalizing detention basins	Small detention areas vs large detention areas
Rain gardens	Retrofitting existing systems

Maintenance

Storm sewer systems	Subdrainage systems
Water quality features	Detention

Colorado Urban Stormwater Management

Live, Interactive Webinar - Tuesday, August 16, 2022

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Learning Objectives

You'll be able to:

Understand the science of stormwater in Colorado, including basics of hydrology, soil science and stormwater modeling.

Identify common issues arising from stormwater drainage in urban areas.

Set stormwater management objectives that comply with Colorado regulations.

Review best management practices for detention basins and foundation drainage.

Discuss practical lessons learned from actual stormwater management projects, including how to handle water quality problems , slope stability and culverts.

Explore sustainable best management practices, and develop maintenance plans for stormwater infrastructure.



HalfMoon Education Live Webinars

Colorado Urban Stormwater Management

Live, Interactive Webinar - Tuesday, August 16, 2022



Learn about hydrology, soil science, drainage, and stormwater modeling

Discuss stormwater regulations in Colorado

Explore detention basins, design considerations, sediment handling, and soil considerations

Compare small detention areas vs large detention areas

Review storm sewer systems, subdrainage systems, water quality features and detentions

Continuing Education Credits

Professional Engineers

Non-Credit Continuing Education (6.0 PDHs)

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6.0 AIA LU | HSW

Landscape Architects

6.0 HSW CE Hours
6.0 LA CES HSW PDHs

Floodplain Managers

6.0 ASFPM CECs

International Code Council

Pending

Certified Planners

CM | 6



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Faculty

Deborah A. Fisher, P.E., CFM, CPESC
Owner, Senior Water Resources Engineer at Water Engineering Solutions LLC

Ms. Fisher has over 30 years of experience in hydrology and hydraulics, having designed hundreds of drainage and water quality treatment facilities all along the front range of Colorado. She has also authored hundreds of drainage studies and is well versed in low impact development, groundwater investigation, and emergency flood mitigation. She was the continuing education director for Martin/Martin for over ten years, and she conducted several hundred classes for the civil department. Ms. Fisher's current passion is helping people and solving water problems, particularly related to floodplains, and understanding water migration and control, both on the surface and underground. She has evaluated hundreds of sites and performed water issue evaluations of floodplains and for conditions such as standing water, wet basements, excessive sump pump discharges, and multiple other drainage issues.

Added Value: Enhance your learning - a recording of this webinar will be available for attendees to stream online for two weeks after the program date.
(Must attend live webinar to earn live webinar credits)

Webinar Information

Log into Webinar 8:00 - 8:30 am MDT	Break 12:00 - 1:00 pm MDT
Morning Session 8:30 am - 12:00 pm MDT	Afternoon Session 1:00 - 4:00 pm MDT

Tuition
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Additional Learning

- Handling Ethical Issues in Government Projects**
- Thurs, July 14, 2022 | 10:00 - 11:00 am CDT

Stormwater Best Management Practices
- Fri, July 15, 2022 | 8:30 am - 5:00 pm CDT

The Tree Course: Science, Design, and Sustainability
- Fri, July 15, 2022 | 7:30 am - 3:30 pm CDT

Writing Successful Proposals and RFPs
- Tues, July 19, 2022 | 8:30 am - 5:00 pm CDT

Advanced HEC-RAS Modeling
- Fri, July 22, 2022 | 8:30 am - 4:20 pm CDT

Highway Bridge Design, Evaluation, Inspection and Rehabilitation
- Mon, July 25, 2022 | 8:30 am - 12:15 pm CDT
- Tues, July 26, 2022 | 8:30 am - 12:15 pm CDT
- Pavement Design, Construction and Maintenance**
- Wed, July 27, 2022 | 10:00 am - 1:10 pm CDT
- Thurs, July 28, 2022 | 10:00 am - 1:40 pm CDT

How to Apply for a Letter of Map Amendment, Start to Finish
- Thurs, July 28, 2022 | 10:00 am - 12:10 pm CDT

Stream Restoration for Design Professionals
- Thurs, July 28, 2022 | 9:00 am - 4:30 pm CDT

Floodplain Mapping, Insurance and Regulation
- Wed, Aug 10, 2022 | 10:00 am - 1:15 pm
- Thurs, Aug 11, 2022 | 10:00 am - 1:15 pm
- For more information and other online learning opportunities visit: www.halfmoonseminars.org

Continuing Education Credit Information

This webinar is open to the public and is intended to offer 6.0 HSW continuing education hours to licensed architects, 6.0 HSW continuing education hours to landscape architects, and a non-credit learning opportunity to engineers licensed in Colorado. Professionals licensed in other states will be able to claim the hours earned at this webinar, in most cases. Refer to specific state rules to determine eligibility.

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The American Institute of Architects Continuing Education System has approved this course for 6.0 LU | HSW (Sponsor No. J885). Only full participation is reportable to the AIA/CES.

The Landscape Architecture Continuing Education System has approved this course for 6.0 HSW PDHs. Only full participation is reportable to the LA CES.

This webinar has been approved by the Association of State Floodplain Managers for 6.0 CECs for floodplain managers.

The International Code Council has approved HalfMoon Education as a Preferred Provider of continuing education (No. 1232). Course approval is pending in the specialty area of Sitework.

HalfMoon Education is an approved CM Provider with the American Planning Association. This course is registered for CM | 6 for Certified Planners.

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Completion certificates will be awarded to participants who complete this event and earn a passing score (80%) on the quiz that follows the presentation (multiple attempts allowed).

Registration

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How to Register		Registrant Information Name: _____ Company/Firm: _____ Address: _____ City: _____ State: _____ Zip: _____ Occupation: _____ Email: _____ Phone: _____ Additional Registrants: Name: _____ Occupation: _____ Email: _____ Phone: _____ Name: _____ Occupation: _____ Email: _____ Phone: _____ Email address is required for credit card receipt, program changes, and notification of upcoming seminars and products. Your email will not be sold or transferred. () I need special accommodations. Please contact me.
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